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ABSTRACT

This action research project implemented and evaluated an intervention program to reduce disruptive behavior interfering with students' academic growth. The targeted population consisted of students in four primary classrooms in a large urban center in central Illinois. The problem of disruptive behavior was documented by means of a behavior checklist, teacher observations, discipline referrals to administration, and academic assessments. Analysis of probable cause data revealed that a changing school population, a decline in parental supervision, a lack of sufficient support personnel, and a curriculum overload contributed to the problem. The professional literature suggested students' lack of responsibility for their own behavior and learning; changes in societal values; an insensitivity to diverse cultures; and lack of social skills. A review of solution strategies resulted in three major categories of intervention: cooperative learning, multiple intelligence strategies, and higher order thinking skills. Post-intervention data indicated a decrease in the disruptive behavior that interfered with students' academic growth. The number of students who were academically at risk decreased as behavior improved. (Nine appendices include a discipline record form, multiple intelligence activity sheet, lesson plans, and other teacher materials. Contains 22 references.)(Author/SD)

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USING MULTIPLE INTELLIGENCES, COOPERATIVE LEARNING, AND HIGHER ORDER THINKING SKILLS TO IMPROVE THE BEHAVIOR OF AT-RISK STUDENTS

Mitzi Dare
Sonya Durand
Lorraine Moeller
Mary Washington

An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

Requirements for the Degree of Master of Arts in Teaching and Leadership

Saint Xavier University and IRI/Skylight

Field-Based Masters Program

Chicago, Illinois

May, 1997

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We wish to dedicate this research project to our families for the encouragement and love they provided and to the students who were our inspiration.

Mitzi Dare
Sonya Durand
Lorraine Moeller
Mary Washington

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ABSTRACT

This report describes a program to reduce the disruptive behavior that interferes with students' academic growth. The targeted population consists of four primary classrooms in a large urban center in central Illinois. The problem of disruptive behavior will be documented by a behavior checklist, teacher observations, discipline referrals to administration, and academic assessments.

Analysis of probable cause data reveals that a changing school population, a decline in parental supervision, a lack of sufficient support personnel, and a curriculum overload contributes to the problem. The professional literature suggests that students lack responsibility for their own behavior and learning; there is a change in societal values; there is an insensitivity to diverse cultures, and students lack social skills.

A review of solution strategies suggested by knowledgeable others, combined with an analysis of the problem setting, resulted in the selection of three major categories of intervention: a utilization of cooperative learning, employment of multiple intelligence strategies, and incorporation of higher order thinking skills.

Postintervention data indicated a decrease in the disruptive behavior that interfered with students' academic growth. The number of students who were academically at risk decreased as behavior improved.

CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students in four primary classrooms exhibit disruptive behavior that interferes with their academic growth. The existence of the problem is evidenced by teachers' discipline record forms, classroom teachers' journal entries, discipline referrals to administration and teachers' academic assessments.

Immediate Problem Context

This action research is taking place in three different schools that serve one community.

School Site A

The primary school which contains grades (K-4) is located in the west central area of the city. The building has under gone 10 major construction programs since it was built in 1925 because of the constant growth within the area. The last addition was built in 1963 with the demolition of four rooms built in 1925 and 1938. Today, there is a busy main street in front of the two story brick school building. Within the school area, there are single family homes, a small public park, and several small businesses.

The population of the school is 509 students with 254 boys and 255 girls. Students come from middle to low income families surrounding the immediate school. The school also draws from a neighborhood of upper income professionals. The racial/ethnic background of the school is: 48.9% White, 46.6% Black, 1.4% Hispanic, 2.9% Asian/Pacific Islander, and 0.2% Native

American. Fifty percent of the student population, representing varied cultural backgrounds, are from economically and socially disadvantaged homes. The students' attendance rate is 95.6%, the student mobility rate is 48.2%, and chronic truancy is 2.6%. More than half of the student population come to the school by buses (State School Report Card, 1995).

The staff of the school consists of one principal, one psychologist, one social worker, one speech pathologist, 28 teachers, and 22 support staff which includes clerks, custodians, cafeteria workers, a library manager, and teacher aides. Over 70% of the school's teachers have Master's degrees, and they have been teaching on the average of 17 years. In total, there are 54 people on staff at the school.

The school's special programs include: Accelerated Reader, I Can, Great Books, a small computer lab, and Latch Key for students before and after school hours.

There are 20 self-contained regular division classrooms whose teachers share ideas and work together within the grade levels. In the Hearing Impaired Department, there are two classrooms of students. Some of these students are mainstreamed into the regular division classrooms. Students from three other special education classrooms are included into regular division classes. There is a self-contained Special Early Childhood Education classroom of 12 students, and there is one primary autistic classroom of six students. During recesses and lunch time, the autistic students socialize with the kindergarten students, and they are together for a language lesson once a week. Students also attend special classes with special teachers for music and physical education. Orchestra is offered to the fourth grade students.

The school's discipline plan follows the district's policy of no tolerance for disrespect or gross misconduct. The classroom teachers handle the majority of the disruptive behavior within the school's environment. Students are sent to the principal's office for further discipline. Gross misconduct and disrespect result in suspension from school. Every Friday, a student is selected by the classroom teacher from every grade to receive the Principal's Award for good conduct and effort. The students and the principal are together in a group picture, and then the students write

their names on posters which are hung in the hallway. Each student also receives a ribbon to wear for the special honor. At the end of each grading period, there is an assembly or a fun activity for the students who earned good conduct and effort grades on their report cards.

School Site B

The primary school site B is an urban school located on a hill adjacent to a large private coeducational university. The residential housing in the immediate area surrounding the school has been converted to university apartment housing in the last 10 years. The building is a three story brick structure constructed just prior to the turn of the century. A modern addition was added to the building in 1958 (Historical Society, personal communication, February 24, 1996).

The school houses two classes in grade levels one through four, four special education classrooms, and one speech pathology classroom. Each room in the modern addition is equipped with an observation room which was once used by the university's teacher trainees, parents, or other authorized personnel observing students and teachers in action. The building also houses a library containing over 17,000 books, a newly designed computer laboratory, a well equipped science laboratory, and a combination gymnasium-auditorium.

Nearly half (46.3%) of its 292 students are from economically and socially disadvantaged homes presenting varied cultural backgrounds. The school's enrollment includes 174 boys (60%) and 118 girls (40%). Four racial groups are represented. These are: White 65%, Black 33.7%, Hispanic 0.3%, and Asian/Pacific Islander 1% (State School Report Card, 1995).

The student attendance rate is 94.6%, the student mobility rate is 36.4%, and chronic truancy is 0%. Students come from four different zip code areas by riding buses. Only 18% of the students are bused in from outside the immediate attendance area and 48% are eligible for free/reduced lunch (State School Report Card, 1995).

The staff of the school consists of one principal, one psychologist, one social worker, one speech pathologist, 15 teachers, and 15 support staff which includes clerks, custodians, cafeteria workers, a library manager, and teacher aides. Over 50% of the school's 15 teachers have

Master's degrees, and they have been teaching on the average of 20 years. In total, there are 30 people on staff at the school.

The school contains students with a large range of abilities, needs, disabilities, and talents. To booster students' achievement and to create a classroom environment conducive to teaching and learning, the following programs were designed: a "hands-on" learning approach to reading, writing, mathematics, and science in all grades; an Accelerated Reading Program; Power Writing in grades one through four; a read-a-loud program called "Drop Everything and Read"; a tutoring and mentoring program; a "hands-on" approach to teaching ecology; an Early Childhood program, and Latch Key. Special classes with specialized teachers in music, art, physical education, and orchestra are also a part of the school's program.

The discipline program of the school adheres to the district's policy of no tolerance for disrespect or gross misconduct. The school awards certificates or some form of recognition is given at the end of each grading period to students receiving above average grades in conduct and effort. This recognition is further enhanced by an all school assembly at the end of the year.

School Site C

The school is one of twelve middle schools in the district, and it is located in the west central area of the city. The 33 year old two story brick facility was constructed in 1962 and opened for students in 1963 as an elementary school. Since that time, the school has had three additions. The first addition was added in 1972. This was built to serve the hearing impaired students in both the city and the surrounding counties. A second addition was added in 1977 to provide additional classroom and library space. The third addition was added in 1991 for still additional classrooms. Today, the school is a spacious middle school facility which is a feeder school for two high school attendance areas. Covering an area of 25.1 acres of land, the school is the largest grade school site within the city. The school has a computer lab, a gymnasium with locker rooms, and a large air conditioned cafeteria.

The student population of the school is 379 students. Of these students, 39.6% are classified as low income. Low income students are pupils from families receiving public aid, students living in institutions for neglected or delinquent children, students being supported in foster homes with public funds, or students who are eligible to receive free or reduced-price lunches. The racial/ethnic make-up of the school is 53.6% White, 43.5% Black, 0.8% Hispanic, and 2.1% Asian/Pacific Islander (State School Report Card, 1995).

The demographics of the school have changed dramatically in the past 10 years. This is the result of people of higher socioeconomic status moving to the suburbs or to private schools. The main reason given by parents is that they are seeking a stronger education and a safer environment. The socioeconomic status of the students reflect the entire spectrum of the working population. The school has a mobility rate of 24.7% (State School Report Card, 1995).

The staff consists of one principal, 19 regular division teachers, 11 special education teachers, two speech pathologists, and 18 support personnel. Included in the regular division, are specialty teachers for music, art, and physical education. Over 50% of the teachers have a Master's degree and have been teaching on the average of 15 years.

The school follows the district's policy on discipline. The policy does not tolerate disrespect nor gross misconduct. The school has an in-school suspension policy, an after school detention hall, and a school wide incentive program for good conduct.

The students enrolled at the school are being serviced by the following groups: regular division, special education, hearing impaired, and an early childhood education program. Students with disabilities are included in the regular classroom setting when possible. These students receive help from special education personnel in the classroom or may receive resource help.

The school has many programs to promote student learning, growth, and development. These programs include: Drug Abuse Resistance Education (D.A.R.E.), Adopt-a-School partnership with the community, Hearing Education and Rehabilitation of Deaf Children

(H.E.A.R.) Organization, Math Counts, Bank It, athletic programs, and Scholars' Cup which is a competitive academic program.

The Surrounding Community

The study takes place in a mid-western city with a population of 113,504 (Economic Development Council for the Peoria Area, 1994). Rich with history, the city is the oldest community in the state, having been settled in 1680 (Polk, 1994). Many beautiful historic buildings have been preserved and maintained.

The city is located in the heart of the state. It is known for big city resources with small town conveniences. A prime selling point about the community is its accessibility. Jobs, shopping, schools, entertainment, and services are all nearby and affordable. The average citizen drives about 10 minutes to get to work. Public transportation is also provided by the city's mass transit. The city is a center for manufacturing of agricultural implements, machinery, wire and wire products, and large trucking equipment. Other products gaining rapidly in major manufacturing areas are: chemical distillation of corn and grain, paper products, coal production, and printed materials (Polk, 1994).

The city is often used as a test market for new products because it has a strong retail market and because of the demographics of the community. Within the population of the city, there are 33,400 single persons' households, 25,500 Blacks, and 3,700 Hispanics (Economic Development Council for the Peoria Area, 1994). The city has a mixture of 269 churches, two synagogues, and 60 religious denominations are represented (Polk, 1994).

Medical and educational services, marketing, advertising, and telecommunications are important employers in the non-manufacturing industries. More than half of all employees are engaged in "white collar" jobs (Polk, 1994). The median family income is $33,488.00 (Economic Development Council for the Peoria Area, 1994).

The city's school district operates 15 primary schools (K-4), 14 middle schools (5-8), and 4 high schools. A kindergarten through eighth grade magnet school offers an enriched program

and a Latch Key school day. Full-day kindergarten is available in all primary schools. A testing program at the end of fourth grade identifies children with exceptional academic capabilities, and these students are offered the opportunity to attend a gifted program for fifth through eighth grade. The total student population of the district is 16,517. The district's pupil-teacher ratio for the elementary schools is 19.7:1. The district's operating expenditure per pupil is $5,556 (State School Report Card, 1995).

The district offers special education programs for students with limited abilities, adult education programs, and vocational education. The district has a Diagnostic Learning Center to help identify students' problem areas and assign the correct curriculum for individual development (Polk, 1994).

The total number of district's employees is 2,847 (Economic Development Council for Peoria Area, 1994). These include administrators, special services staff, teachers, clerks, maintenance workers, cafeteria workers, library managers, aides, and bus drivers.

In the administration staff, there are five top administrators. They are: the Superintendent, an Assistant Superintendent of School Operations, an Assistant Superintendent of Pupil Services, an Assistant Superintendent of Special Services, and the Controller-Treasurer.

The district's teacher racial/ethnic background is: 92.3% White, 7% Black, 0.4% Hispanic, and 0.4% Asian/Pacific Islander. The gender of the district's teachers is 23.7% male and 76.3% female. The average teaching experience of the district's teachers is 13.8 years. Fifty-four percent of the teachers hold Bachelor's degrees and 45.6% of the teachers hold Master's degrees and above. The average teacher's salary for the district is $34,361 (State School Report Card, 1995).

The district is governed by a seven member elected School Board. More than 90% of all students in the public school system graduate from high school, and more than 60% of the graduates go to college (Polk, 1994).

The city is recovering from a major manufacturing strike which caused division within the community. Another issue is the lost of tax base revenue for the school district due to the moving of many professional workers to the suburbs. There is also a concern by the school community regarding inclusion within the schools.

National Context of the Problem

The decline of the traditional family has caused many problems. Todays parents lack the time to model social skills or teach values that transfer positive behavior to the school's environment. Parents lack the time to correct, assist, and communicate expected behavior. More students are coming to school without these skills (Bellanca, 1992).

Recently, the Phi Delta Kappa Gallup Poll of the Public's Attitudes Toward the Public Schools was published. The 1995 edition is number 27 in the annual series. It features in depth exploration of significant national education issues. In the year 1995, the biggest problem faced by local public schools was judged to be "lack of discipline." This was also the case in 18 of the 26 previous Phi Delta Kappa Gallup polls. "Fifteen percent of all respondents mentioned discipline or lack of student control, while 9% listed fighting/violence/gangs as a major problem." (Elam & Rose, 1995, p. 52). Eighteen percent of 1994's respondents mentioned fighting/violence/gangs which tied with discipline (Elam & Rose, 1995).

Bennett and Roheiser-Bennett's (1992) article, "A Restructuring Journey," supports Phi Delta Kappa's Gallup Poll findings that lack of discipline in the schools is the number one concern. It seems that discipline problems are a part of the teaching profession. Classroom management consists, in part, of preventing and responding to misbehavior. Handling disruptive behavior becomes more time consuming than involving students in their learning.

Haskins, Swift, and Spivak's study (as cited in Finn, Pannozzo, & Voelkl, 1995) found that in the elementary grades disruptive behavior was associated with depressed academic performances and with behavior problems in the upper grades. "The researchers also noted that a

disruptive act by one pupil was often followed by a second disruptive act by another in a sort of "contagion effect." (Finn et al., 1995, p. 424).

Leona Eggert's research project sponsored by the National Institute on Drug Abuse and the National Institute of Mental Health states, "When energy is channeled constructively, students have lower levels of stress, depression, and hopelessness. And, when students are not contending with conflict, Eggert shows, their academic achievement improves." (Black, 1994, p. 29).

Numerous research indicates that disruptive behavior adversely effects the academic growth of students. Therefore, it is important that the cycle of non-compliant behavior and poor school performance be interrupted as early as possible (Finn, et al., 1995).

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

In order to document the degree of student disruptive behavior a discipline record form, anecdotal records consisting of teacher journal observations, and mid-term grade reports for a four week period were used.

The targeted population of 81 students were involved in the data collection process. Of the 81 students, 23 attend school A at the kindergarten level, 37 attend school B at the fourth grade level, and 19 attend school C at the fifth grade level. Daily journals were kept at each site to annotate observed behaviors recorded on the discipline referral chart (Appendix A) during the month of September. At the end of September, the mid-point of the first grading period, students at sites B and C earning a D or F average in the academic subject areas were identified as at risk. At site A kindergarten students receiving an N (needs improvement) were identified as at risk.

These processes enabled the researchers to identify the students at risk with their behavior and academic achievement. The collection of the data will be conducted throughout the intervention period at the mid-point and end of each grading period. These reports will help the researchers to further assess and identify problems in behavior and academic subject areas.

A summary of discipline referrals is presented in Table 1. The checklist was used to enable the researchers to identify the number of incidents of inappropriate behavior.

TABLE 1

Categories and Numbers of Discipline Referrals • September 3, 1996 - September 20, 1996

Behavior Category	Number of Incidents				Number of Students			
	K	4th	5th	Total	K	4th	5th	Total
Time Off Task	6	34	31	71	5	5	8	18
Fighting - Physical	7	0	0	7	6	0	0	6
Fighting - Verbal	0	0	2	2	0	0	2	2
Insubordination	5	3	2	10	2	2	1	5
Disrepectful	2	5	7	14	1	3	3	7
Tattling	1	2	0	3	1	2	0	3
Using Profanity	0	0	0	0	0	0	0	0
Disturbing Others	12	9	5	26	6	3	3	12
No Assignment	9	41	27	77	6	11	12	29
N = Kindergarten • 23								
N = 4th • 37								
N = 5th • 19								

Of the 210 incidents the highest percentages for the fourth and fifth grades were found in "no assignment" and "time off task". The highest number of incidents of students disturbing others occurred in the kindergarten. Further analysis of the checklist indicated that at each grade level there was a small percentage of students involved in inappropriate behaviors. These data are presented in figures 1, 2, and 3.

Kindergarten

Figure 1 • Percentage of discipline referrals at each category, September 1996.

Of the 42 discipline referrals in kindergarten 29% were for disturbing others and 17% for physical fighting. The researcher at the kindergarten level indicates the probable cause to be that many of the students have not been exposed to the modeling of appropriate social skills expected in a formal school setting.

4th Grade

Figure 2 • Percentage of discipline referrals at each category, September 1996.

There were 94 discipline referrals recorded in the fourth grade. The high incidence of no assignment is considered by the researchers to be due to the fact that prior to the fourth grade the students have not been held accountable for the timely completion of their assignments.

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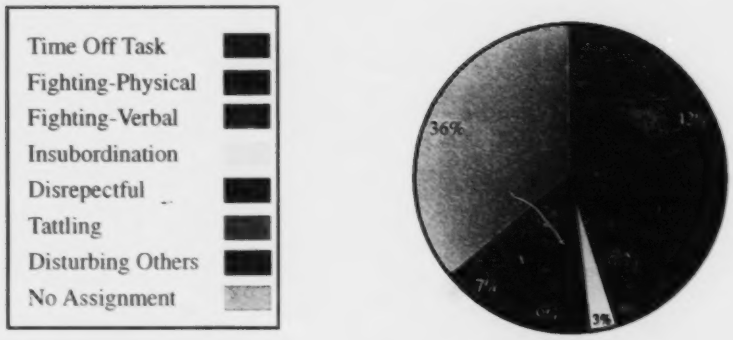

5th Grade

Figure 3 • Percentage of discipline referrals at each category, September 1996.

Of the 74 incidents recorded at the fifth grade level 42% were for time off task and 36% were for no assignments. The researcher at this site suggests that students coming from a self contained classroom find it difficult to adjust to the changes the middle school environment presents. Further analysis would indicate that at this time the psychological and physiological development of the transescent child impacts the learning process.

The researchers also found it noteworthy that one of the highest percentages of referrals at all three grade levels was for no assignment. They credit these high percentages to the students lack of responsibility for work at the fourth and fifth grade levels. At kindergarten, fourth and fifth the likelihood of parents not being aware of, or not monitoring what their children's particular school responsibilities are was considered to be a factor.

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The number of at risk students in the academic subject areas were identified at sites A, B. and C. The data are presented in Table 2.

TABLE 2

Subjects and Number of At Risk Students Per Grade Level • September 1996

Subject	Kindergarten	Fourth Grade	Fifth Grade
Reading	10	5	5
Spelling	NA	6	5
English	NA	7	5
Math	NA	6	NA
Science	NA	4	NA
Social Studies	NA	10	5
Handwriting	5	NA	NA
Motor Skills	1	NA	NA

NA = Not Assessed

At this time, kindergarten progress assessment is only reported in the areas shown on the table. The fifth grade at site C is departmentalized and numbers appear only where subject is taught by the researcher. The fourth grade shows twice the number of at risk students in social studies as the fifth grade. This high number of at risk students could be the result of fourth grade being the first time this subject has been assessed for a letter grade. The number of at risk students in the language arts is similar in the fourth and fifth grades.

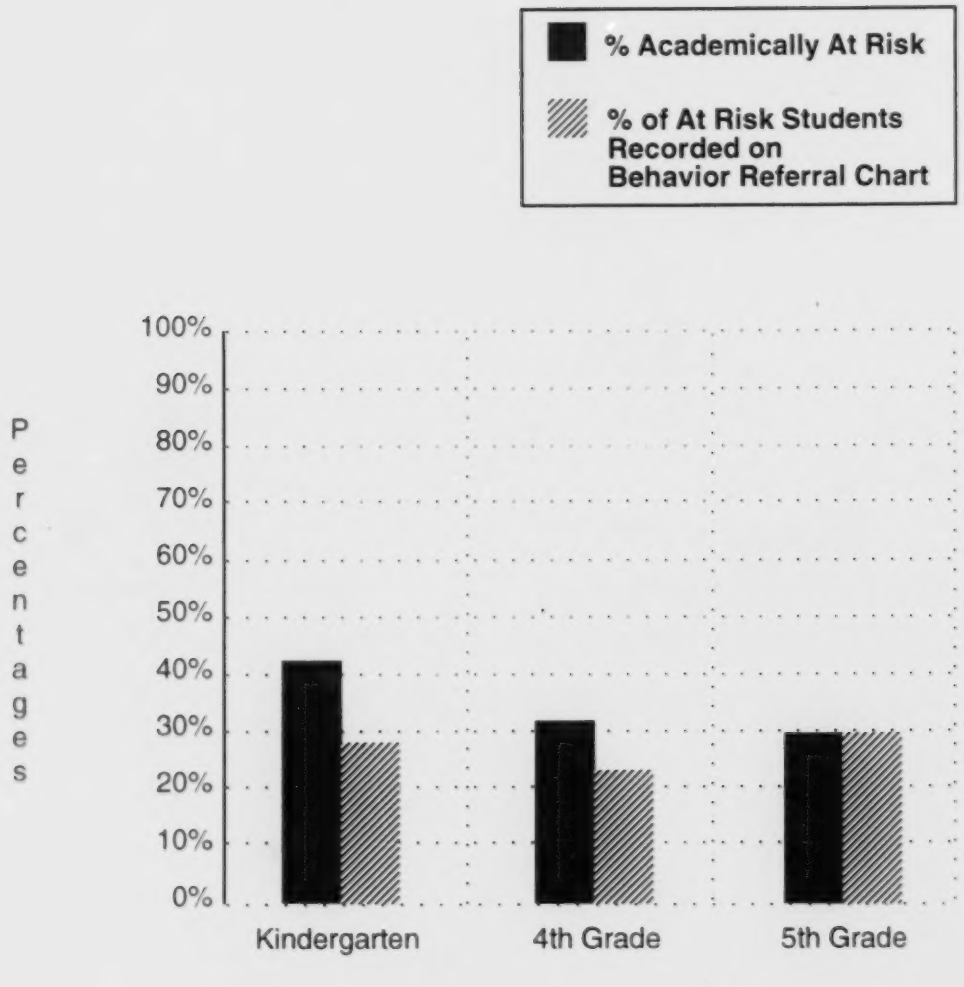

Figure 4 The percentages of academically at risk students and the percentages of this population behaviorally at risk as noted during the first three weeks of the 1996-97 school year.

The graph in Figure 4 shows the relationship between behavior referrals and the academically at risk students. The results indicate that as the students progress in school the behaviorally at risk are also academically at risk. After reviewing the results of the data the researchers suggest that the course of action will continue to be one that actively engages the students in the learning process and as the students find success the behavior should improve.

Probable Cause

The literature suggests several causes for disruptive behavior in the classroom which interferes with students' academic growth. One of the causes is the dissolution of the "traditional" family. Comer (as cited in Bellanca, 1992) stated many sociologists have documented that the different family structures affect student achievement and behavior in the schools.

Another probable cause is that todays schools are faced with many parents who lack parental skills and the time for their youngsters. Because of the economic struggle to raise a family, parents are not able to provide support, to assist, to correct, to model positive values, to communicate expected behavior, and to encourage social skills (Bellanca, 1992).

Kubey and Czikszentmihalyi (as cited in Bellanca, 1992) expressed that four hours or more of television viewing per day does not encourage positive behavior in the classroom or on the playground. Lickona (1991) stated:

> The typical elementary school child spends 30 hours a week in front of the television set. By the age 16, the average child will have witnessed an estimated 200,000 acts of violence and by age 18, approximately 40,000 sexually titillating scenes. Episodes of sexualized violence are increasingly common. (p.5)

Also, the goals of todays youth are being driven by monetary gains. The materialistic gain becomes the justification for breaking rules. Students, therefore, seek other means such as gang activities to enable them to achieve the monetary things they wish to possess. Through gang activities, inappropriate behavior may arise in the classroom.

Due to a moral break down in our society, there is an increase in violent crimes. These crimes may cause self-destructive behaviors such as drug abuse and suicide (Lickona, 1991).

To summarize the literature presented, Bronfenbrenner (as cited in Johnson, Johnson, Holubec, & Roy,1984) stated:

> The roots of student alienation lie in the stress and the lack of caring and support in their families, their educational and community experiences. Family disorganization, particularly, has shown to be an antecedent to behavior disorders, lack of school achievement, and pathology in children and adolescents. (p. 6)

The site-based probable causes for this project affirm the causes from the literature with the exception of drug abuse and gang activities. These causes are evidenced by teachers' observations, the state school report, and administrative behavior records.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Many educators today are concerned with the disruptive behavior in the classroom that is interfering with the educational progress of the students. The goal of this project is to decrease the number of inappropriate behaviors and improve students' academic growth.

According to Anderson and Prawat (1983), the process of socialization helps children to acquire work and social skills which enable them to function effectively in the classroom. When students have not acquired these social skills, the employment of cooperative learning, conflict resolution, peer mediation, and character development may be utilized within the classroom to bring about the desired social behaviors. Included with these procedures would be a concerted effort to increase parental involvement.

Johnson and Johnson (as cited in Johnson and Johnson, Holubec, & Roy, 1984) stated that cooperative learning occurs when students work together to maximize each other's achievement to promote positive relationships, and to encourage the process of acceptance among students, thereby contributing to the solution of the socialization problem. Four basic elements must be included for small group learning to be truly cooperative. These elements are: positive interdependence (goal, task, resource, role, and reward), fact to face interaction among students, individual accountability for mastering the assigned material, and interpersonal and small group skills being used appropriately by students.

Johnson and Johnson and Cohen (as cited in Bellanca, 1992) stated that the use of cooperative learning is one approach that will improve social skills while promoting students' academic growth. Joyce, Showers, and Rolheiser-Bennett (as cited in Bellanca, 1992) stated that cooperative learning also fosters higher-order thinking and creates new learning experiences for students. The social skills acquired through cooperative learning provide powerful benefits which can be transferred from the classroom into the community, the workplace, and into life itself.

Literature suggests that the use of cooperative learning strategies improves both student achievement and the quality of their interpersonal relationships. Slavin's (1991) research on cooperative learning stated:

> When group goals and individual accountability are used, achievement effects of cooperative learning are consistently positive; 37 of 44 experimental/control comparisons of at least four weeks' duration have found significantly positive effects and none favored traditional methods. Achievement effects of cooperative learning have been found to about the same degree at all grade levels (2-12), in all major subjects, and in urban, rural, and suburban schools. Effects are equally positive for high, average, and low achievers. Positive effects of cooperative learning have been consistently found on such diverse outcomes as self-esteem, intergroup relations, acceptance of academically handicapped students, attitudes toward school, and ability to work cooperatively. (p.71)

Other benefits of cooperative learning are: offering an alternative to tracking, tempering the negative aspects of competition, and promoting students' acceptance of differences, whether those differences result from handicaps or from racial or ethnic backgrounds (Ellis & Whalen, 1990).

Social skills instruction should begin as early as preschool and continue throughout the students' educational career. It is imperative to build a strong foundation by providing modeling, guided practice, and constructive feedback in the cooperative social skills.

It is generally perceived that students today are receiving less guidance from their homes, churches, and communities than they received in the past. As a result, the public schools are expected to increase the role they play in the socialization of children (Anderson & Prawat,1983). Many schools are initiating the teaching of value education and character responsibility as ways to address this problem as well as decrease the number of incidents of inappropriate behavior.

Children are not born with the tools to behave responsibly but must be taught to be responsible. Experts define responsibility in various ways. Chamberlin and Chambers (1994) defined responsibility as a value-laden term and behaving responsibly is often done according to an individual perception of the situation and circumstances. Greenberg (as cited in Pica, 1993) said that responsibility is the ability to see the view point of other people and to feel concern or empathy for them. For the purpose of this project the following definition will apply: "Responsibility means taking care of ourselves, others, and our surroundings. This includes fulfilling our obligations, keeping our commitments, striving to do and be our personal and moral best, and nurturing and supporting one another." (Stiehl, 1993, p. 39).

Responsibility is clearly an abstract concept that is subject to many interpretations. We must help students develop responsibility by teaching the skills of critical thinking; effective communication,which includes perceptive listening and clear exact speaking; conflict resolution; and cooperative skills. Integrating these skills throughout the daily curriculum will help lead the students toward responsible behavior.

In 1990-91, 25 elementary and middle schools in the Los Angeles Unified School District pilot-tested the values education curriculum of the Jefferson Center for Character Education. The program endeavors to teach the language of values such as honesty, perseverance, respect, and tolerance. With the teachers' help the students learn the words, understand the concepts, and eventually recognize and practice appropriate behaviors (Leming, 1993). The Los Angeles program's findings were encouraging. The most obvious effect was a drop in discipline and behavior problems. In the middle schools, there was a 66% drop in major behavior problems, minor discipline problems dropped 65%, suspensions by 37%, and absences plummeted by 82%. Principals in the program stated that there was a rise in student responsibility. Students did not blame others, they tended to act in a more responsible way, they resisted peer pressure, and they generally understood the concepts of respect and honesty. The number of students on the honor roll rose as did student participation in extracurricular activities (Brooks & Kann, 1992).

As a part of the teaching of social skills, the setting of a risk free environment is paramount. Hill and Johnson (as cited in Fogarty and Bellanca, 1993) stated:

> The group climate should be warm, accepting and non-threatening. This kind of climate is of particular importance because it is invariably necessary for members to expose their

> ignorance, take risks with their ideas, and engage in controversy with other group members. Good discussions are possible only if members are protected by a warm, understanding group climate. (p.17)

It is the teacher's responsibility to see that students feel accepted and supported, rather than isolated and intimidated in the classroom. Creating positive and supportive teacher-student, and peer relationships are involved. Other responsibilities include ensuring that students understand the school environment, the classroom operations, and the reasons for these procedures. The students should be actively involved in developing their learning which includes the academic procedures such as what will be learned, why it will be learned, and how it will be assessed (Jones with Jones, 1995). Students need to understand why instructional decisions are made in order to transfer their learning into real life.

Providing an environment that encourages responsible actions is one of the most effective ways for teachers to assist students to show greater responsibility. Also, students learn from what they practice and do. Students should be given appropriate opportunities for practicing responsibility in order to learn to behave responsibly as adults. It is important to show responsibility while attempting to teach a child to be more responsible. Teachers must be willing to accept small approximations of what may be a responsible action. Learning occurs more quickly and more completely in small increments (Chamberlin & Chambers, 1994).

Educators believe a key factor for improving student learning and attitude is parental involvement. McCaslin and Murdock (as cited in Balli, 1996) found that students internalize their parents expectations about education. How effectively children cope with the daily challenges they face at school is determined by these internalized messages. Therefore, establishing a partnership between school and family is important for social and academic success.

Teachers can facilitate parental involvement by creating an environment in which parents feel they are valued and are treated warmly and respectfully. When parents know teachers' instructional goals and classroom management procedures, they are more likely to encourage student achievement and support the teacher if problems arise. Barth (as cited in Balli, 1996) indicated that students' achievement improved when daily notes were sent to parents informing them as to how to help their children academically. Schrick (as cited in Balli, 1996) stated that students' achievement is positively impacted if parental involvement is comprehensive and

sustained over time.

Active Parenting is a video tape program developed by Michael H. Popkin. It is designed to teach parents about goal setting, planning, and decision making. The video tape program provides skills for parents to better enable them to assist children in problem solving. The video series includes ways to work with children in problem solving and it provides various approaches to creating a better environment at home and school. This program was implemented in Tennessee's Parent Involvement Program in 1986-87. At the end of the program a parent survey was conducted involving 95% of the 1,100 participants. Parents were asked if they agreed or strongly agreed about their involvement in their children's education, their attitude about the school, their ability to help their children, and their recommendation of this program to other parents. The results showed 90% of the participants in the survey reported children's skills and attitudes improved. There was an 81% perception of improvement in their children's behavior (Lueder,1989).

A program by John Lazares at Wilson Jr. High School in Hamilton, Ohio showed a decrease in expulsions, and on some days there was a drop in after school detentions from 20 to zero. This preventive discipline program required parents to attend school when students earned a suspension. To remove the suspension, parents had to spend one day in class with their child (Lickona, 1991).

Parents and educators must come together to share their vision of education. They must celebrate differences and consider practical means to encourage the social and academic success of children.

In order to maintain a risk free environment, teachers must teach to the intelligences of their students. Historically, schools have operated under the assumption that all intelligence is fixed. Many scholars have challenged this assumption. Among those exploring the human brain were Feuerstein and Rand who worked on cognitive modifiability through cognitive mediation. Sperry investigated the way the right and left sides of the brain process information. Steinberg, Ceci, and Feldman studied the development of different types of intelligence, and Howard Gardner developed the theory of multiple intelligence (Chapman, 1993). Despite their different approaches, these scholars all suggested that humans show intelligent behavior in various ways.

Howard Gardner and Robert Sternberg viewed intelligence as being multi-dimensional and

that the learning environment should capitalize on those dimensions for energy and for enhancement. Gardner stated that our unique personalities are combinations of dimensions of intelligence in different mixes (Joyce & Weil, 1996).

The seven intelligences Gardner described are: verbal/linguistic, which is related to written and spoken languages; musical/rhythmical, which is based on recognition of tonal patterns, environmental sounds, and on sensitivity to rhythm and beats; logical/mathematical, which deals with deductive thinking and reasoning, numbers, and the recognition of abstract patterns; visual/spatial,which relies on the sense of sight and the ability to visualize an object and to create mental images/pictures; bodily/kinesthetic, which relates to physical movement and the knowings/wisdom of the body, including the brain's motor cortex, which controls bodily motion; intrapersonal, which relates to inner states of being, self reflection,metacognition, and awareness of spiritual realities, and interpersonal, which operates primarily through person-to-person relationships and communication, and relies on all of the other intelligences (Lazear, 1992).

Kristen Nelson's (1995) article, "Nurturing Kids' Seven Ways of Being Smart," stated that she employed the seven intelligences in her sixth grade classroom in California. Her findings for the employment of the intelligences showed an increased percentage of students discovered their strengths, put more effort into improving their weaker areas, and felt better about themselves. Nelson now feels more comfortable with her students' individualistic thinking as well as her own.

Mihaly Csikszentmihalyi developed the concept of "flow" which is a learning center program utilizing the seven intelligences. He indicated that when students are encouraged to expand their strengths, they are more likely to enjoy their work and to pursue increased growth with confidence (White, Blythe, & Gardner,1992). The literature tends to support the fact that educators who are incorporating the theory of multiple intelligence are enthusiastic because of the limitless strategies they can use to implement the theory.

In order to prepare our students for the possibilities of a future that cannot even be imagined, the expedient course would be one that kindles the critical and creative patterns for thinking (Fogarty & Bellanca, 1993). Traditionally, classrooms have been content/product oriented rather than problem solving oriented. In todays complicated world, students need to use higher order thinking techniques in order to address the challenges within our society. When we challenge students to think, question, doubt, wonder, explore, analyze, and hypothesize, we supply plentiful ground for them to think about their thinking and to learn about their learning.

In order to prepare for the uncertainty of the future, students need to have the opportunity to examine situations, to exchange ideas, and to generate alternatives (Fogarty & Bellanca, 1993).

Whittington's (1993) article, "Increasing Teaching Effectiveness by Encouraging Higher Order Thinking," stated:

> Bloom's Taxonomy was built on a theory of varying levels of complexity in which cognitive thought and associated behaviors could be classified into six hierarchical levels (knowledge, comprehension, application, analysis, synthesis, and evaluation). Bloom argued that accomplishing higher order thinking (application, analysis, synthesis, and evaluation) required some analysis or understanding of the new situation, a background of knowledge of methods which could be readily utilized, and some facility in discerning the appropriate relations between previous experience and the new situation (Bloom, 1956). (p.14)

Bloom's Taxonomy is a basis for many existing thinking skills programs in use today.

Students do not automatically learn to think critically about what they hear or read. These skills must be taught. A study conducted by Wolf in 1967 found that the effects of teaching logic to elementary students was beneficial. This study involved detecting errors such as hasty, unrepresentative, and faulty generalizations, post-hoc reasoning, faulty analogies, false dilemmas, and all-or-nothing mistakes (Underbakke, Borg, & Peterson, 1993). Further support for the teaching of thinking as a necessary component of school reform is strongly advocated by the National Education Association and the American Federation of Teachers (Marzano, 1993). Most research shows with reasonable consistency that the thinking ability of students can be improved, even at a very young age (Underbakke, Borg, & Peterson, 1993). Knowledge and skills are primary goals of education. The active use of such will be enhanced if students are taught thinking skills and given opportunities to practice them.

Project Objectives and Processes

After the review of the literature on this subject, the following project objective is proposed:

> As a result of teaching specific social skills, during the period of September 1996 to January 1997, the targeted students in the kindergarten, fourth, and fifth grade classrooms will decrease the number of incidents of inappropriate behavior, as measured by teachers' discipline record forms, teachers' journal entries, and administrative discipline referral forms.

In order to accomplish the project objective, the following processes are necessary:

1. Researchers will create a list of social skills for cooperative learning.

2. Researchers will identify cooperative learning activities that address the targeted social skills.

3. Researchers will identify curriculum to provide opportunities to practice the use of the social skills in base groups and task groups.

After the review of the literature on this subject, the following project objective is proposed:

> As a result of employing the theory of multiple intelligences and Higher Order Thinking Skills (HOTS) with academic content, during the period of September 1996 to January 1997, the targeted students in the kindergarten, fourth, and fifth grade classrooms will improve their academic growth, as measured by teachers' academic assessments and teachers' journal entries.

In order to accomplish the project objective, the following processes are necessary:

1. Researchers will develop lessons that target the multiple intelligences.

2. Researchers will integrate Higher Order Thinking Skills (HOTS) into the content areas.

Project Action Plan

Prior to the opening of school, researchers will conduct informal conferences with students' previous teachers and will check students' academic records in the grades fourth and fifth in the targeted schools B and C. The kindergarten in targeted school A will access any preschool information that is available.

During the first week of school, researchers will write journal entries and will conduct teacher observations, using the discipline record forms (Appendix A), of all the targeted children in grades kindergarten, fourth, and fifth at schools A, B, and C. In addition, classroom rules, procedures, and expectations will be established.

During the second week of school, there will be continued journal writing and recording of inappropriate behaviors on the discipline record forms at all of the targeted schools. The students will participate in a people search. The purpose of the people search is to introduce the social skills, to establish a risk free climate, and to lay the foundation for cooperative groupings. The people search will be administered to all students in grades fourth and fifth in targeted schools B and C (Appendix B). A similar age appropriate activity will be administered in kindergarten in targeted school A. Researchers will begin presenting multiple intelligence activities to all the

students in the targeted schools A, B, and C (Appendix C). There will be a weekly presentation of each of the intelligences.

By the third week of school, the teachers in all targeted schools will begin forming cooperative learning groups. Group selection and continuing activities for this project will be done according to the criteria set forth in the action plan outline that follows:

I. Cooperative Learning

A. Groups (2-5 students)

1. Mixed gender (culturally diverse)
2. Ability
3. Temperament

B. Social Skills

1. Listening
2. Sharing
3. Taking turns
4. Using 6" voices
5. Encouraging
6. Staying on task

C. Activities

1. Think-Pair-Share
2. Round Robin
3. T-Chart (Listening Non Listening)
4. K.W.L.
5. Tell and Retell (Appendix D)
6. Draw This

D. Curriculum Infusion

1. Language Arts (Appendix E)
2. Social Studies (Appendix F)
3. Science (Appendix G)
4. Math (Appendix H)

E. Scheduling

1. Social Skills - daily

2. Curriculum Infusion

a. After social skills in place - approximately two months

b. Two to three times per week as deemed necessary by unit activities

II Multiple Intelligences

A. Introduction

B. Activities

1. Say It (Verbal/Linguistic)

2. Song or Rap Writing (Musical/Rhythmic) (Appendix C)

3. Voices (Interpersonal)

4. Fishing for Compliments (Intrapersonal) (Appendix C)

5. Act the Word (Bodily/Kinesthetic)

6. Story Puzzle (Visual Spatial)

7. Giant Creatures (Logical/Mathematical)

C. Curriculum Infusion

1. Language Arts (Appendix E)

2. Social Studies (Appendix F)

3. Math (Appendix H)

4. Science (Appendix G)

D. Scheduling

1. Multiple Intelligences - one time per week

2. Curriculum Infusion

a. After introduction activities are completed

b. Two times per week or as deemed necessary by unit activities

III. Higher Order Thinking Skills

A. Thinking Skills

1. Classifying

2. Describing

3. Predicting

B. Activities

1. Clues (Appendix I)

2. One Potato Two Potato

3. A Novel Idea

4. Mrs. Potter's Questions

5.People Search

C. Curriculum Infusion

1. Language Arts (Appendix E)

2. Social Studies (Appendix F)

3. Math (Appendix H)

4. Science (Appendix G)

D. Scheduling

1. HOTS - one time per week

2. Curriculum Infusion

a. After targeted thinking skills lessons

b. Three times per week or as deemed necessary by the curriculum

Methods of Assessment

In order to assess the effect of the intervention, teachers' discipline record forms, teachers' journal entries, administrative discipline referral forms, and teachers' academic assessments will be used. A review of the collected data from the discipline record forms, administrative discipline referral forms, and teachers' academic assessments will be compiled in a report every four weeks. The results of each mid-term report will be compared. These reports will give the researchers the opportunity to reflect on the progress of the students over the course of the intervention period. Additionally, teachers' journal entries will provide the researchers a broader selection of data from which to interpret the progress of the targeted students.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to decrease students' inappropriate behaviors thus affecting their academic growth. The implementations of cooperative learning, multiple intelligences, and higher order thinking skills were selected to affect the decrease in the number of incidents of inappropriate behavior and to improve students' academic growth.

Discipline record forms (Appendix A) were used at all the targeted schools to record the number of inappropriate behaviors. Researchers used journal entries to collect data on higher order thinking skills, multiple intelligences, cooperative learning, and teacher observations.

Creating a warm classroom climate, which is one of the components of cooperative learning, was implemented at the beginning of the school year. The researchers used a people search during the third week of the school year as an activity to help establish a warm climate (Appendix B). A people search is an activity where students are allowed to get acquainted by interacting with each other while moving freely around the classroom. Because of their age level and the students' abilities at the beginning of the school year, the researcher at site A used a picture matching activity for the people search. The researchers at sites B and C used a questionnaire for their people search activity. Through the use of the people search, the researchers were able to lay the foundation for cooperative learning. During the course of the intervention, the social skills that were implemented were listening, sharing, taking turns, using six inch voices, encouraging, and staying on task.

Due to the scheduling and the age level of the students at site A, the researcher began grouping the students by using think-pair-share instead of forming base groups during the fourth week. The think-pair-share grouping is a form of cooperative learning involving two students where they are thinking and sharing information together. Throughout the intervention, the think-pair-share form of grouping was used. Gradually, the teacher was able to place the students in groups of three.

The researchers in site B also began groupings with think-pair-share. Then, base groups of four students were formed during the third week of school and used throughout the intervention.

The researcher at site C established base groups of four students during the third week of school. These groups were maintained throughout the course of the intervention.

Multiple intelligences were used to improve academic growth among the students and to acquaint students with how they learn. The seven intelligences used during the course of the intervention were verbal/linguistic, musical/rhythmic, interpersonal, intrapersonal, bodily/kinesthetic, visual/spatial, and logical/mathematical. The kindergarten curriculum was able to lend itself easily to using the multiple intelligences daily for the targeted students at site A. The researcher made a conscious effort to provide lessons that incorporated the multiple intelligences, but did not teach the specific names of the intelligences to the students.

The researchers at sites B and C were able to incorporate the intelligences in the lessons, and the targeted students were able to identify the intelligences after they were presented. Each week, a different multiple intelligence was introduced to the targeted students at sites B and C. After all seven intelligences were introduced, curriculum infusion of these intelligences were incorporated twice per week or as deemed necessary by unit activities. Examples of curriculum infusion of the multiple intelligences are found in appendices E, F, G, and H.

The implementation of higher order thinking skills was also used to improve academic growth among the students. The three higher order thinking skills used during the intervention were classifying, describing, and predicting. Throughout the three sites, the thinking skills were infused into the curriculum in meaningful ways. Appendices E, F, G, and H are examples of curriculum infusion for higher order thinking skills. Through discussions of real-life situations, students were expected to transfer the three thinking skills.

Presentations and Analysis of Results

In order to assess the effects of cooperative learning, higher order thinking skills, and multiple intelligences on behavior, a weekly tally of discipline referrals was compiled (Appencix A). These data were assembled during two grading periods and are presented in Table 3.

TABLE 3

Categories and Numbers of Discipline Referrals

	Average Number of Incidents Per Day									Number of Students								
	Kindergarten			Fourth(2 classes)			Fifth			Kindergarten			Fourth(2 Classes)			Fifth		
Behavior Category	Pre Inv. 14 Days	1st G.P. 34 Days	2nd G.P. 44 Days	Pre Inv. 14 Days	1st G.P. 34 Days	2nd G.P. 44 Days	Pre Inv. 14 Days	1st G.P. 34 Days	2nd G.P. 44 Days	Pre Inv. 14 Days	1st G.P. 34 Days	2nd G.P. 44 Days	Pre Inv. 14 Days	1st G.P. 34 Days	2nd G.P. 44 Days	Pre Inv. 14 Days	1st G.P. 34 Days	2nd G.P. 44 Days
Time Off Task	.5	.6	.5<	2.4	1.7	1.8	2.2	0	.5<	5	5	2	5	10	12	8	3	2
Fighting-Physical	.5	.5<	.5<	0	0	0	0	.5<	0	6	8	2	0	0	0	0	0	2
Fighting-Verbal	0	0	0	0	.5<	0	.5<	0	0	0	0	0	0	1	0	2	0	0
Insubordination	.5<	.5<	.5<	.5<	.5<	.5<	.5<	.5<	0	2	1	1	2	3	3	1	0	1
Disrespectful	.5<	.5<	.5<	.5<	.5<	.5<	.5<	0	.5<	1	1	2	3	2	2	3	0	1
Tattling	.5<	0	0	.5<	.5<	.5<	0	0	0	1	0	1	2	2	1	0	0	0
Using Profanity	0	.5<	0	.5<	.5<	.5<	0	0	0	0	1	0	0	1	0	0	0	0
Disturbing Others	.8	.5	.5<	.6	.6	.5<	.5<	.5<	0	6	7	7	3	6	4	3	1	3
No Assignments	.6	1	.7	2.9	2.4	2.6	1.9	.5<	.5<	6	12	10	11	12	19	12	9	7

N=Kindergarten • 23

N=Fourth • 37 (2 classes)

N=Fifth • 19

At this time the researchers would like to draw attention to the fact that the number of days in the reporting periods were not the same. The preintervention consisted of 14 days, the first grading period had 34 days, and the second grading period had 45 days at the fourth grade site and 44 days at the kindergarten and fifth grade sites. In order to permit comparison, the data are presented as average number of incidents per day. If the average was below .5 a less than (<) is indicated.

The targeted kindergarten showed a decrease in "time off task", "physical fighting", and "disturbing others". During the fourteen days of the preintervention there was an average of .5 incidents of "time off task." There was a slight increase in this behavior during the remaining 34 days of the first grading period. In the second grading period there was an insignificant number of incidents recorded. The number of students involved in "time off task" at the preintervention was five and remained the same at the end of the first grading period. By the end of the intervention, only two students were involved in the "time off task" behavior category.

Prior to the intervention "physical fighting" averaged .5 incidents per day which decreased to less than .5 for the remaining days of the intervention. The number of students involved in "physical fighting" increased from six at the preintervention to eight at the end of the first grading period. By the end of the intervention, there were only two students involved in physical fighting.

There were an average of .8 incidents per day of "disturbing other" during the preintervention period. This dropped steadily to less than .5 by the end of the intervention. The number of students involved in "disturbing others" increased from six at preintervention to seven at the end of the first grading period and remained the same to the end of the intervention.

The researcher also noted that during the preintervention "no assignment" averaged .6 incidents per day. The 34 remaining days of the first grading period showed an increase to an average of one incident per day. During the second grading period "no assignment" dropped to

.7 incidents per day. The number of students involved in "no assignment" increased from six at the preintervention to 12 at the end of the first grading period. By the end of the intervention, there were 10 students involved in this behavior category. Though the number of incidents is slightly higher than the preintervention, the researcher at the kindergarten site attributes the probable cause to be the increase in number of days at school. Therefore, the students would have more assignments than during the preintervention period.

The targeted fourth grades consisted of two classes totaling 37 students. "No assignment" averaged 2.9 incidents per day during the preintervention. The 34 days of the first grading period showed a small decrease. In the 45 days of the second grading period "no assignment" changed to 2.6 incidents per day. It is noteworthy that the researchers at the site believe this to be a consequential improvement considering the number of students involved (37) and the increased number of days from preintervention to the end of the second grading period. The number of students involved in "no assignment" increased from 11 at preintervention to 12 at the end of the first grading period, then escalating to 19 by the end of the intervention. Researchers observed that 65% of these incidents were ascribed to two students.

The preintervention revealed 2.4 incidents of "time off task" which dropped to 1.8 by the end of the intervention. Throughout the intervention the number of students involved in "time off task" more than doubled. Again, two students were responsible for 65% of the preintervention incidents, 73% of the first grading period incidents, and 84% of the incidents in the second grading period.

The average number of incidents in "disturbing others" was .6 at preintervention and showed less than .5 by the end of the intervention. The other areas, as indicated on the chart, were not considered a problem.

At the fifth grade site, the researcher noted decreases in "time off task" and "no assignment". During the 14 days of the preintervention there was an average of 2.2 incidents of

"time off task" recorded per day. For the remaining 34 days of the first grading period there were no incidents recorded. There was a slight but insignificant increase during the 44 days of the second grading period. The number of students involved in "time off task" decreased from eight at the preintervention to three at the end of the first grading period; then it decreased further to two by the end of the intervention.

A dramatic decrease was shown in the category of "no assignment". Preintervention showed an average of 1.9 incidents per day which dropped to an inconsequential number by the end of the second grading period. In the category of "no assignment" the number of students involved decreased from 12 at the preintervention to nine at the end of the first grading period; then it decreased further to seven by the end of the intervention.

The researchers at all the sites feel the intervention of cooperative learning had a positive effect on most of the targeted behaviors. During the intervention the teachers' journal entries indicated the students' improving ability to interact with one another using appropriate social skills.

The number of students at risk academically based on grades and or deficiency notices pre and post intervention are presented in Table 4.

Table 4

Number of Students Academically At Risk

	Kindergarten			Fourth(2 classes)			Fifth		
Subject	Pre	End 1st	End 2nd	Pre	End 1st	End 2nd	Pre	End 1st	End 2nd
	14 Days	34 Days	44 Days	14 Days	34 Days	45 Days	14 Days	34 Days	44 Days
Reading	10	11	7	5	3	4	5	5	4
Spelling	NA	NA	NA	6	7	4	5	7	3
English	NA	NA	NA	7	9	3	5	7	3
Math	NA	3	2	6	6	10	NA	NA	NA
Science	NA	NA	NA	4	2	7	NA	NA	NA
Social Studies	NA	NA	NA	10	7	4	5	5	4
K. Handwriting	5	1	1	NA	NA	NA	NA	NA	NA
K. Motor Skills	1	1	1	NA	NA	NA	NA	NA	NA

NA=Not Assessed

The number of kindergarten students academically at risk in reading at the preintervention was 10 showing a small increase at the first grading period then, decreasing to seven by the end of the second grading period. The researcher believes that the high number in reading may be attributed to the lack of students' early learning experiences either from home or preschool. There were some students who did not have preschool experiences before entering kindergarten. Also, the number of days a child attends preschool and the kind of preschool program provided may have impacted the child's success upon entering the formal school setting. The primary focus in kindergarten is on reading readiness.

Math was not assessed during preintervention. Three students were identified at risk at the end of the first grading period dropping to two by the end of the second grading period. The use of cooperative learning with manipulatives, this researcher feels, was paramount to the success in this subject area and resulted in low numbers of at-risk students throughout the intervention period.

There were five students recorded as at risk in "handwriting" at preintervention decreasing to only one by the end of the second grading period. Only one student was identified as at risk in "motor skills" throughout the entire intervention. The continuing low number of students at risk with "motor skills" was attributed to the daily practice with pencils, scissors, and paper. Multiple intelligences and cooperative learning were integrated into the curriculum by the researcher in a way that engaged students in creative and stimulating practice (see Appendix H).

At the fourth grade site, there was a slight decrease in the number of at-risk students in all subjects except math and science. Five students were identified at risk in reading at the preintervention dropping to three at the end of the first grading period and leveling to four at the end of the intervention. In spelling, six students were at risk at preintervention increasing slightly to seven students at risk, and finally showing only four students at risk by the end of the intervention. The number of students academically at risk in English was seven during

preintervention. At the end of the first grading period nine students were identified as at risk, dropping dramatically to three students identified as at risk by the end of the intervention.

The number of at-risk students in math was six for the preintervention showing no change at the end of the first grading period. This escalated to ten by the end of the intervention. Science, at preintervention, showed four students at risk dropping to two by the end of the first grading period and then increasing to seven students at risk by the end of the second grading period. Researchers feel the implementation being interrupted by testing, special holiday events, and vacation days may have contributed to a higher number of at-risk students in math and science. Also, at the mid-point of the 4th grade the mastery of the multiplication facts is imperative as precursor to division. The higher number of at-risk students at this time may not be indicative of a failure of the implementation but rather the emphasis the researchers placed on memorizing the multiplication facts. Most students at risk in math may not have been receiving the necessary assistance and encouragement from home to complete this task in a timely manner. Researchers feel one probable cause for the increase in students at risk in science is the time allotted to the subject. This restricts the number of assessments that are given. Therefore, each grade is at a premium and the final grade can be greatly influenced by one or two low grades.

There was a significant decrease in at-risk students in social studies. There were 10 students at risk during preintervention showing a decrease to seven at the end of the first grading period. This continued to drop steadily to four students at risk by the end of the second grading period.

At the fifth grade site, reading and social studies showed five students academically at risk during preintervention with no change at the end of the first grading period. There was a small decrease to four by the end of the intervention. Both spelling and English showed five students academically at risk during the preintervention. This increased to seven at the end of the first grading period and fell to three by the end of the intervention. The teacher at the site noted

that some students who are still considered at risk made a dramatic improvement that is not reflected in Table 4.

The table clearly shows that there was a significant decrease in at-risk students in social studies, reading, spelling, and English at the fourth and fifth grade sites. The researchers feel that the improvement may be related to the interactive programs and projects the students were doing that involved the use of higher order thinking skills, multiple intelligences, and cooperative learning (see Appendixes C, D, E, and F).

A comparison of at-risk students and those at-risk academically are presented in Figure 8.

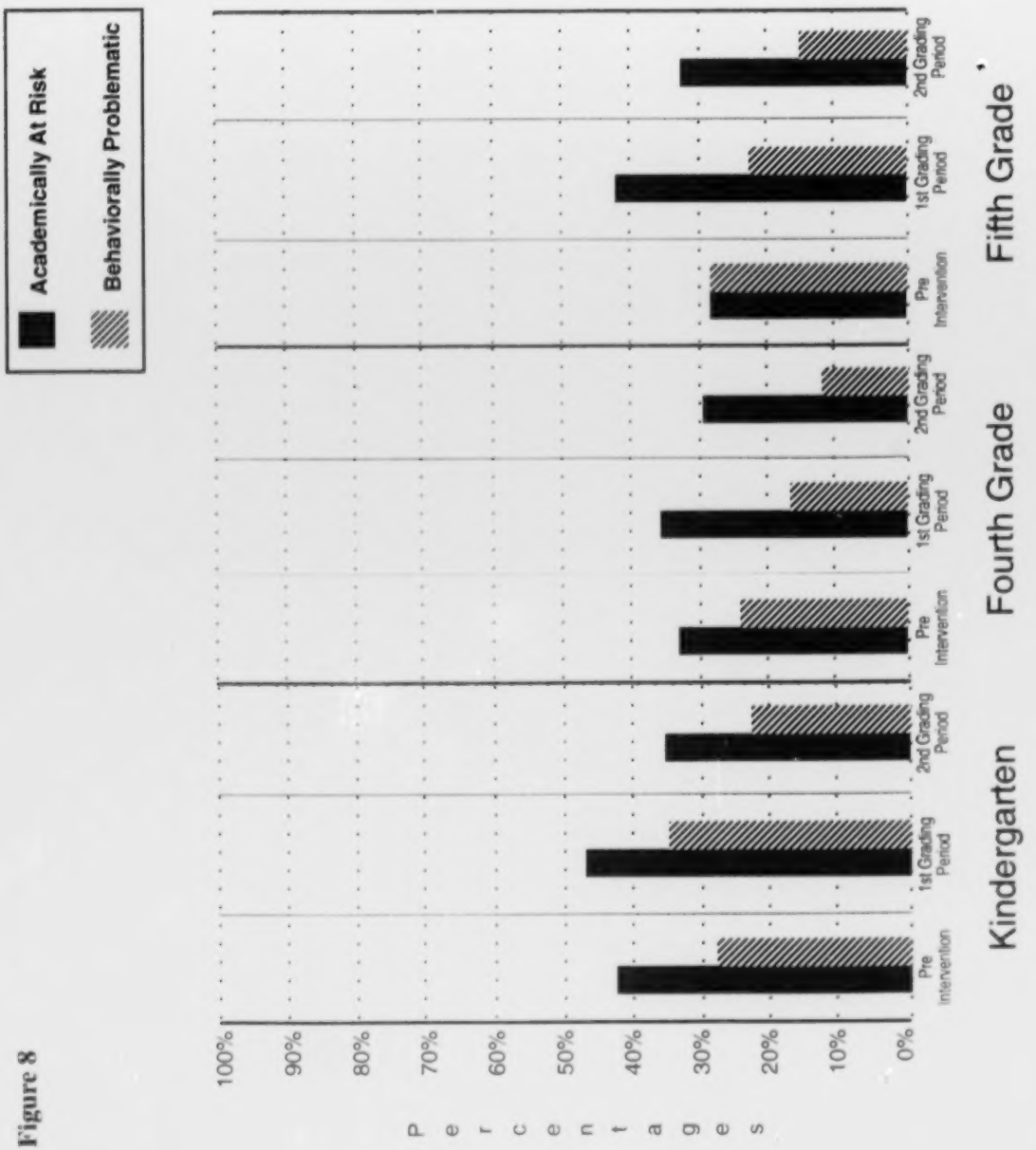

Figure 8

The percentages of academically at-risk students and the percentage of this population behaviorally at risk during the first four weeks, the end of the first grading period, and the second grading period of the 1996-97 school year.

At kindergarten level 43% of the students were academically at risk during the preintervention. Sixty percent of those students appeared on the Behavior Referral Chart (see Appendix A). The first grading period showed an increase to 48% of the students at risk academically and of that number 74% appeared on the behavior chart. There was a decrease to 35% academically at risk by the end of the intervention. Of that 35%, 65% appeared on the discipline referral chart. This decrease in the number of students academically at risk may be the result of parental involvement and natural maturation.

At the fourth grade site during the 14 days of the preintervention 32% of the students were identified as academically at risk. Of that number 75% appeared on the discipline referral chart. At the end of the first grading period there was an increase to 35% academically at risk and of that number 41% appeared on the behavior chart. The end of the second grading period reveals a decrease to 30% academically at risk. A substantial 40% decrease occurred in those receiving behavior referrals from the preintervention to the end of the second grading period. In addition, the teachers were encouraged by the slight decrease in the percentage of students academically at risk. It is noteworthy that two students in the fourth grade classes accounted for the majority of the discipline referrals as well as being identified as students academically at risk. The researchers believe the scope of these two students' problems belied the effects of the implementation over this limited period of time. These chronic behavior and academically at-risk students were observed by the researchers to show enthusiasm and the desire to participate in the special activities of the intervention. The few successes that these students achieved at school were noted to occur during the activities of the intervention.

The fifth grade site data indicated 29% of the students to be academically at risk during the preintervention. One hundred percent of those students appeared on the behavior referral chart. By the end of the first grading period the students academically at risk had increased to 42% and of that number there was a dramatic 50% decrease in the number of students appearing

on the discipline referral chart. The second grading period showed a 10% decrease in academically at-risk students and the number of students on the discipline referral chart remained at 50%. The effective transfer of the social skills of cooperative learning is the probable reason given by the teacher for the decline. The researcher found the students were positively reinforced by compliments received from community presenters who came to the classroom. This positive reinforcement built self-esteem among the students throughout the intervention.

Conclusions and Recommendations

Based on the analysis of the data on discipline referrals, students at risk academically, and the researchers personal observations several conclusions are possible. The social skills learned during cooperative learning activities appear to have transferred in the fourth and fifth grades to interpersonal behavior. Little time had to be spent intervening in student disputes. The researchers at the sites indicated that visitors to their classrooms remarked about the good listening skills of their students and the camaraderie exhibited when they were interacting. The kindergarten teacher observed a prominent difference in the social skills of the students receiving this intervention that was not present in previous classes. Overall, the implementation was observed to be a significant factor in the betterment of the students at all the sites. The researchers feel that there were additional benefits that are not apparent in the data that were collected. The intangible of enthusiasm was clearly in evidence whenever the students were participating in activities that incorporated the use of higher order thinking, multiple intelligences, and cooperative learning. In particular, the researchers all noted that the at-risk students were drawn into lessons and projects with enthusiasm and interest that had not been observed prior to the implementation of these techniques. The researchers feel than an ongoing program utilizing these intervention techniques would continue to impact the at-risk student and bring about improvement behaviorally as well as academically.

Due to time constraints and changes in schedules, incorporating all of the intervention activities was difficult. The teachers would recommend that other researchers conduct their studies over a longer period of time and perhaps limit the intervention to one or two targeted areas such as cooperative learning and multiple intelligences.

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Appendices

DISCIPLINE RECORD FORM

	Time off task	Fighting-physical	Fighting-verbal	Insubordination	Disrespectful	Tattling	Using Profanity	Disturbing Others	No Assignment	Comment
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Insubordination = Overt disregard of teacher instructions.

Disrespectful = Talking back, body language, making faces.

Appendix B

People Search

Find someone who ...

1. can name someone from our city that won a medal in the summer Olympics

   _____

2. can draw a shoe tree _____

3. has ridden on a train _____

4. has a definition for friendship_____

5. can name the largest animal on earth _____

6. has read ***Matilda*** by Roald Dahl _____

7. knows what will happen in Sydney, Australia in the year 2000

   _____

8. knows how to make a grilled cheese sandwich _____

Appendix C

Activity: Song or Rap Writing **Grade Level 4/5**

Multiple Intelligence

Musical/Rhythmical
Verbal/Linguistic
Interpersonal
Intrapersonal
Body/Kinesthetic

The following activity is designed to be used as an accompaniment to the reading aloud of the fanciful tale *James and the Giant Peach* by Roald Dahl.

* Students will work with their base groups of four students.
* Assign group roles - musical director, recorder, encourager, speaker
* Tell the students that they are to write a song or a rap that tells about James Henry Trotter's incredible adventure with his unusual friends.
* Select a melody,(i.e. sung to the tune of "On Top of Old Smoky") play it for the students and tell them that they are to write the lyrics to fit that rhythm pattern.
* Model for the students by making up a song or rap about the class . Call on volunteers to help complete the song or rap.
* Students may need more than one session to complete their song.
* Each group will perform their song or rap for the class. Each group's speaker will announce their group as they perform.
* Video tape the performances and then let the students view the tape.
* Finally, have the students complete the reflection and the Likert scale.
* This activity could be used in other subject areas.

* **See** Reflection and Likert scale on the following page

Appendix C

Reflection

The easiest part of this project was

_____

_____

_____

_____

The hardest part of this project was

_____

_____

_____

_____

This project taught me

_____

_____

_____

_____

Rate - A - Song - Rap

Did your song or rap tell the story of James Henry Trotter?

/----------/----------/

Not Really **A Little** **Sensational**

Appendix C

Activity: Fishing for Compliments

Grade Level: Kindergarten ,Fourth and Fifth

Multiple Intelligence: Intrapersonal and Interpersonal

Fishing for Compliments

Place an old fishing basket in the classroom. **or** Decorate a "fishing box" (shoe box with a slot) and place it in the classroom.

Fourth and Fifth

Encourage the students to write compliments about anyone in the class and place them in the box.

The teacher would monitor the box to make certain that all the students had a compliment.

Kindergarten

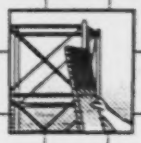
The kindergarten teacher would write compliments about all the students and place them in the basket. As the students understand the idea of giving compliments they would tell their compliments to the teacher privately so that they may be written and put in the basket.

All Grades

Just before dismissal each day, "fish" for compliments by selecting and reading aloud items from the box.

Give the written compliments to the persons they are written about.

BLUEPRINT:
ELEMENTARY LESSON



SETTING UP THE SCAFFOLDING

WORDING THE CREW

TELL / RETELL

To teach about attentive listening, prepare a bulletin board with an attentive listening theme. Show pictures of (a) a class attending to the teacher, (b) group members attending to each other, (c) a class attending to a visitor, and (d) a class attending to a student speaker.

Make and display a T-chart on the bulletin board.

ATTENTIVE LISTENING

SOUNDS LIKE	LOOKS LIKE
1. "uh huh"	1. eyes alert and focused on talker
2. "I see."	2. mirroring emotions
3. clarifying questions	3. leaning forward or toward speaker
4. silence	4. head nods at right time
5. paraphrasing	5. taking notes
6.	6.
7.	7.
8.	8.

Gather students around and explain the bulletin board and chart. Ask volunteers to share how it feels to have someone's full attention. Solicit several answers. Demonstrate with the principal, another teacher or a volunteer what attentive listening looks and sounds like.

Divide students into pairs. Instruct one student to share a fun adventure. Instruct the other to attend closely so he/she can repeat the story. Walk among the pairs and give a thumbs-up to each child seen listening.

Use this monitoring time to be aware of misbehaving students, especially during these times when interpersonal skills and social behavior are the focus. Be aware of "the kid who..." seeks attention, feels inadequate, makes the power play, is looking for revenge or shows signs of emotional disturbances.

When a misbehaving student exhibits a deficit in a social skill, review the strategies presented earlier in this chapter and take time to address the social skill with clear, directed and effective action. Say, for example, in this "Tell/Retell" lesson, one student is causing lots of distraction during the partner interaction by clowning around and *seeking the attention* of the students around him/her. This is the teachable moment in which to address the question, **"What do you do with the kid who...*seeks attention*?"** Looking back at the suggested strategies to gradually extinguish this misbehavior, the teacher could begin with the strategy *recognizing a student who is modeling the proper behavior.* For example, standing near the attention seeker who is faking falling out of his chair to get attention from his partner and others, the teacher might say to a nearby pair: "I like the way you're positioned for good listening. Eye-to-eye, knee-to-knee is how attentive listening partners often sit."

By focusing on the desired modeled behavior and by telling explicitly what it looks like, the teacher cues the misbehaving student about two things: 1) modeling desired behavior gets the attention of the teacher, and 2) the desired behavior looks like this.

Although these actions seem like simple classroom management, by addressing the incident within the context of learning, the teacher adds power to the reinforcement strategy. Additionally, the teacher can talk about the incident or use the groups' reflection time to lead discussion on the idea of "seeking attention" as "clowning around."

Reflecting on the Design

To process affectively, conduct a brief sharing, then let several listeners tell the class what they heard in their partner interactions. Praise them for good listening. Have them tell how it felt to have someone listen so carefully.

To process the social skill of active listening, ask students to tell about someone they think is a *good* listener.

To process cognitively, continue to practice on succeeding days. Begin each practice with a review of the T-chart. End it with praise to the attentive listeners.

After several short practices, have a discussion in which the class talks about (a) why listening attentively is a good idea, and (b) what times in class and at home are important for attentive listening. This metacognitive talk helps students transfer the social skill beyond the lesson.

□ □ □

Appendix E

Lesson Plan: Language Arts - Classifying

Cooperative Learning

Multiple Intelligence - Verbal/Linguistic and Interpersonal

Higher Order Thinking Skill - Classifying

Grade Level: 4/5

Focus Activity

* Display objects on a table.
* Students will observe and think about how objects are connected.
* Students will share their ideas.

Lesson Objective

* Classifying
* Tell students they will learn to classify, or group, words according to ways in which they are alike. The whole group is called a category or class.

Input

* Define the thinking skill of "classifying".
* Illicit synonyms from the students (Examples: grouping, categorizing, organizing, sorting).
* Put a list of words on the overhead.
* Provide a mental menu for classification.
    - **C** luster similar words
    - **L** abel clusters
    - **U** ntangle subclusters
    - **E** xamine clusters and subclusters
    - **S** et patterns

Appendix E

Structured Activity

Instructions:

1. Put students in cooperative groups. (Structured small groups of four with designated role responsibilities for each member)

   * Materials Manager - The materials manager will collect materials.
   * Recorder - The recorder will arrange Post-it notes according to group consensus.
   * Encourager - The encourager will encourage the group to stay on task.
   * Reporter - The reporter will explain the how and why the group chose the words in their word clusters.

2. Each group is given a list of nouns on Post-it paper.

3. Students will cluster the nouns in groups and designate a label for their categories.

4. After fifteen minutes, call time. Then, instruct the groups to count the number of categories identified and to review the methods used to think through the task.

5. Each group's reporter will explain the how and the why their groups formed their word clusters.

Metacognitive Discussion

Whole class discussion

1. Explain the steps used to classify the nouns.
2. Identify the words that were difficult to classify. What did groups do to solve the problem (s)?
3. Ask students to describe where else this skill of classifying might be helpful to them.

Closure

1. Review the definition of classifying.
2. Have students explain the steps of classifying in their own words.
3. Given a list of nouns, with categories stated, students will work independently to place the nouns in the categories using the steps of classifying.

Anticipated Transfer

This skill can be transferred to:

Reading - Dewey Decimal System, card catalog

Social Studies - Classifying cities, states, countries, continents, etc.

Science - Classifying plants, animals, machines, etc.

Appendix F

Lesson Plan: Social Studies **Grade Level:** 4 / 5

Cooperative Learning

Multiple Intelligences - Bodily Kinesthetic, Verbal Linguistic, Intrapersonal and Interpersonal

Higher Order Thinking Skills - Explain (Why)-Analyzing-Cause and Effect

SIMULATION # 9

The King's M & M's®

Topic

Colonial America's reaction to the Stamp Act

Objective

Students will explain why Americans were upset with British tax laws, such as the Stamp Act, after the French and Indian War. They will also identify two tactics colonials used to demonstrate their displeasure with these taxes.

Materials

- one 8 ounce (224grams) bag of M & M's®
- pages 37-39, reproduced on index paper or heavy stock
- one small paper cup for each student
- two plastic spoons (or surgical latex gloves)

Procedures

1. Prepare the Role Cards as directed on pages 37-38.
2. Cut out the Object Cards on page 39. Label the six cards with names of items commonly worn or possessed by students within class — e.g., jeans, running shoes, glasses, pens, jewelry. You do not need to use all six cards; three to six cards seem to work well for this simulation. In the corner box of each of the object cards, write a number ranging from one to three. As will be explained later, these numbers will represent a taxable value.
3. At the start of class give each student a paper cup containing ten M & M's®. Instruct students not to touch them.

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The King's M & M's® *(cont.)*

Procedure (cont.)

4. Randomly pass out the role cards to students. Explain that those possessing the "King," "Parliament," and "Tax Collector" cards should proceed to the front of the room. The king should take a designated "seat of honor," and the members of Parliament should also have a specific area from which they will enact their roles.
5. Members of Parliament (those students possessing "Parliament" Role Cards) will draw from your previously compiled and prepared group of Object Cards. Parliament members announce to the "Colonists" what item is to be taxed (e.g., blue jeans), and anyone possessing that item will have to pay out the number of M & M's equal to the number written on the object card. So if the card marked "blue jeans — 3" is pulled, each colonist attired in blue jeans would relinquish three M & M's®.
6. Those students possessing "Tax Collector" role cards do all of the collecting using plastic spoons or gloves and all "taxes" are returned to Parliament. (Each tax collector has charge over half the room.) Taxes should be levied for at least three items but not more than six. If you have a good idea of what is popular in student dress, four items seems to be an optimum number for successfully relieving several students of all their candy and leaving many more with just two or three of their original total.
7. After all taxes have been levied, the funds are to be dispersed. The tax collectors each reap 10% of the take. Parliament receives 50% (these funds to be used to run the empire) to be split equally among the two students in that role. Finally, King George pockets the remaining 40% for himself. (These percentages have no real historical significance and are only an arbitrary breakdown for purposes to fit this simulation.) It is quite possible that while some students will have had all of their M & M's® confiscated, members of Parliament and the king will have upwards of thirty to forty pieces each to show for their efforts.

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SIMULATION #9

The King's M & M's® *(cont.)*

Procedure (cont.)

8. Some students may show definite feelings of displeasure just as some on the receiving end of this taxing generosity may gloat just a bit too much. The objective for this lesson should be completed during the withdrawal from the roles.

For Discussion

Understanding how the colonists reacted to the tax collectors and the various tax laws from the Stamp Act and beyond will be more relevant to the class at this crucial moment. Discuss the following questions:

- What was so unfair about how the class was taxed?
- How could it have been handled more fairly?
- Why were tax collectors tarred and feathered?
- Why were British goods boycotted?
- What methods and organizations were devised by the colonists in order to resist and circumvent these laws?
- How significant were these laws to the ultimate break from Great Britain?

Background

While it can be used as an anticipatory set, "The King's M & M's®" is most effective in the discussion about the Stamp Act after the topic has been introduced and formally presented. Sufficient background makes post-simulation review more meaningful. Since the colonists were upset about new taxes on paper and the lack of representation in the establishment of those taxes, this strategic activity attempts to draw students into a similar, albeit contrived, situation where items they value are arbitrarily removed from their possession without their input.

The students' frustration with the "unfairness" of the way they lost their candy can be easily compared to the substantial give and take on one of the central issues leading to revolution — taxation without representation.

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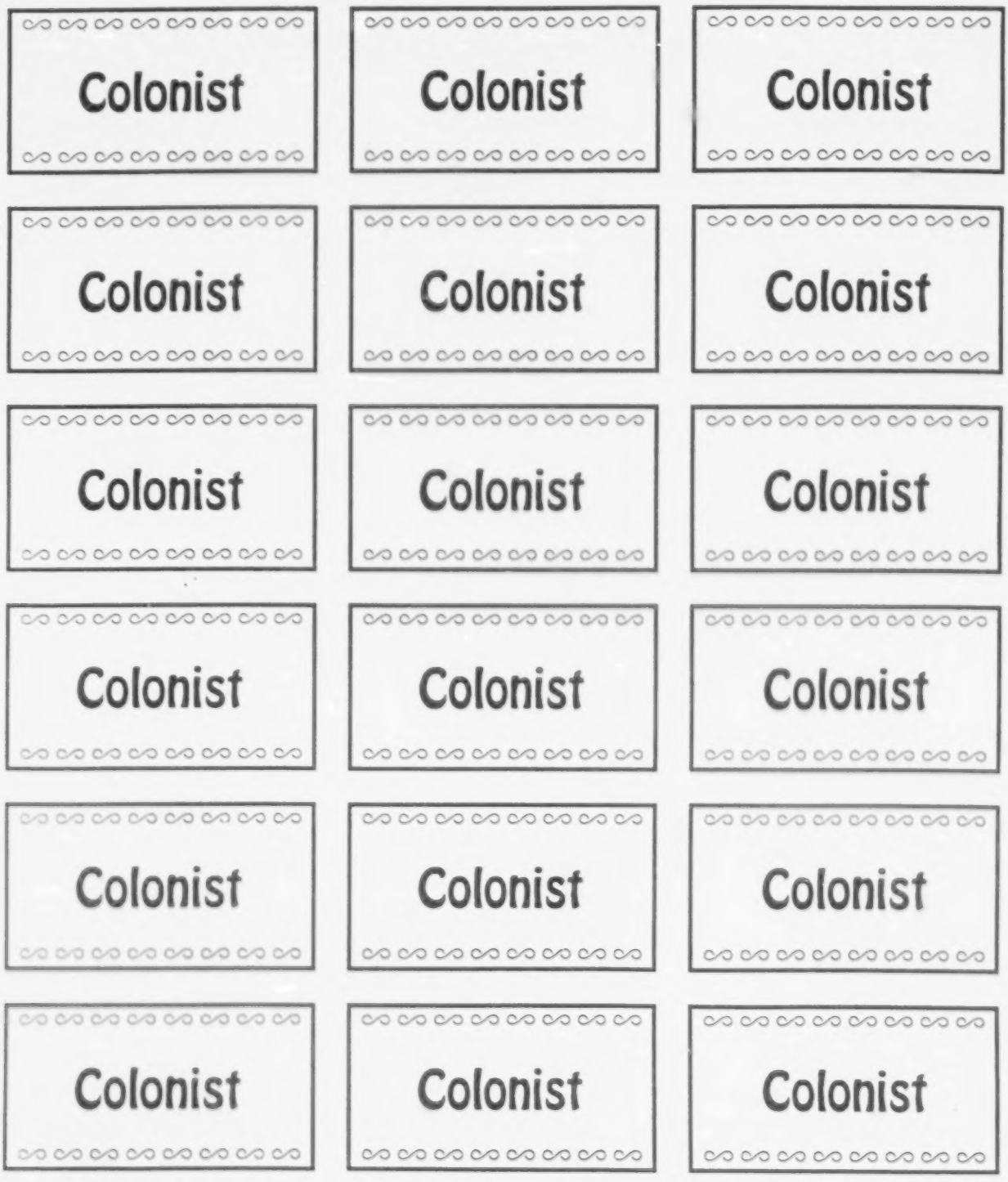
Role Cards

Cut out, color, and laminate (if desired), the role cards below. See pages 34-36 for directions on the use of the role cards.

King	Parliament	Parliament
Tax Collector	Tax Collector	Colonist
Colonist	Colonist	Colonist
Colonist	Colonist	Colonist
Colonist	Colonist	Colonist
Colonist	Colonist	Colonist

Role Cards *(cont.)*

Cut out, color, and laminate (if desired), the role cards below. See pages 34-36 for directions on the use of the role cards.



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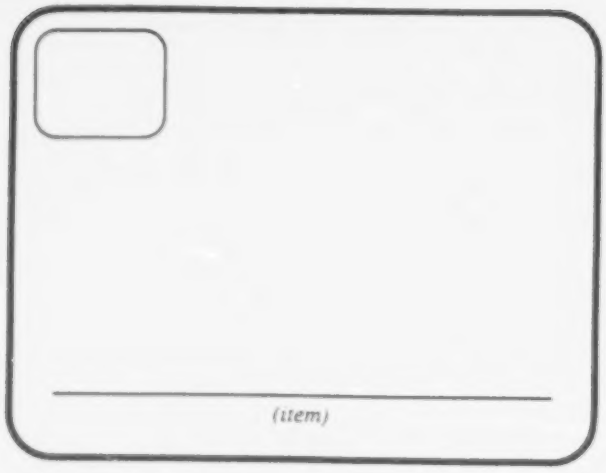
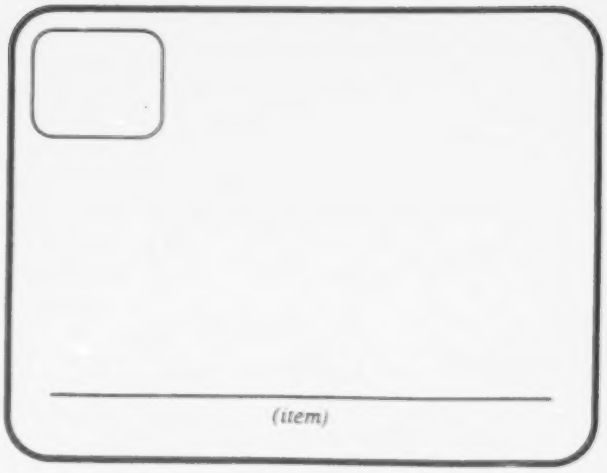
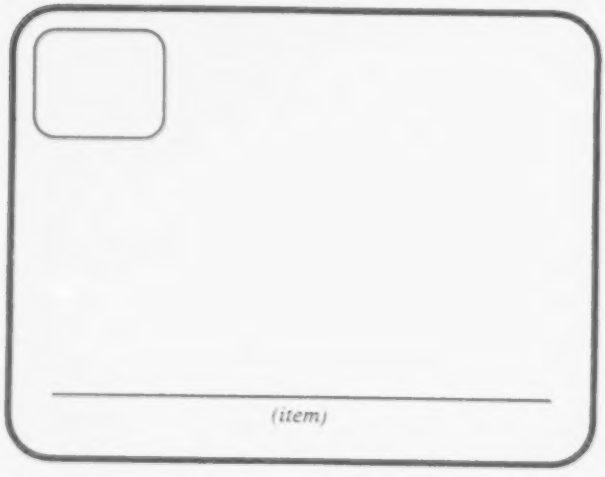
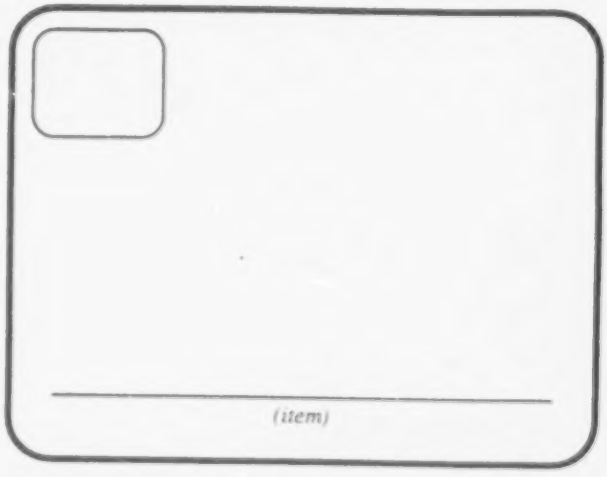
Object Cards

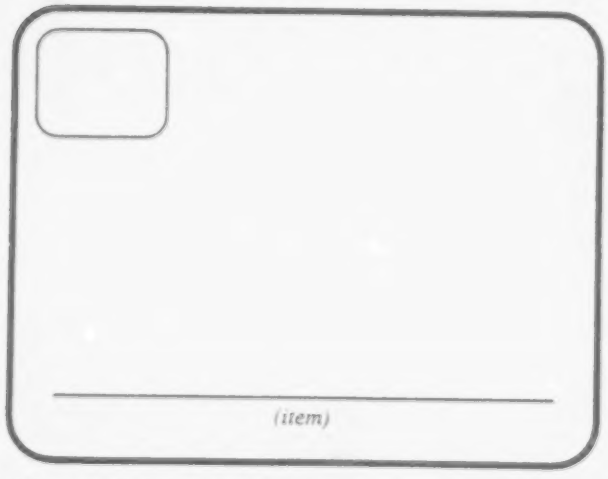
See pages 34 and 35 for directions.

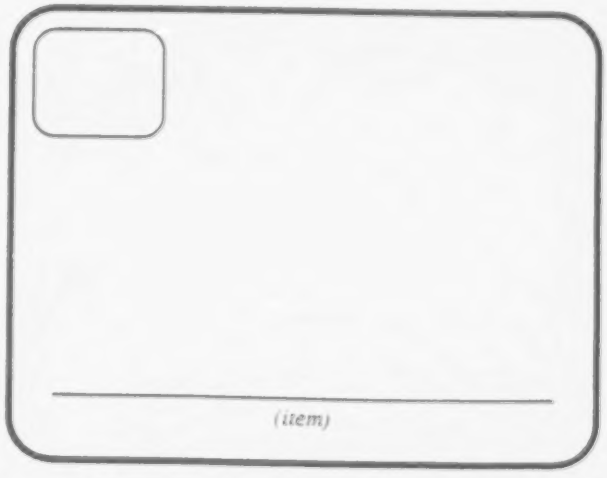












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Appendix G

Lesson Plan: Science (The Insect World)

Cooperative Learning

1. Base groups of five-mixed ability and gender
2. Four members per group
3. Each group will consist of a reporter, recorder, timer, and a material manager.

Multiple Intelligences: visual/spatial, intrapersonal, verbal/linguistic, and interpersonal

Higher Order Thinking Skills: describing, classifying, and creating

Grade Level: Fourth/Fifth

Materials: Five sets of markers, five large sheets of butcher paper, individual hand-outs of Create a Creature Classification Lab Chart, transparency of lab chart, plastic or rubber insects, and PMI sheets.

Objective: Students will create a creature using a list of scientific descriptions from a classification chart.

Focus Activity:

1. Display a collection of five-ten plastic or rubber insects on a table.
2. Material managers will select an insect for their group.
3. Each group will describe their chosen insect.
4. Recorders will write the group's descriptions under the proper categories: Shapes, Body Parts, Body Cover, and Movement.
5. Allow five minutes for group discussion or processing of ideas.
6. The teacher will write groups' responses on the chalkboard.

Input:

1. Using the transparency of the Creative Creature Classification Lab Chart (attached), each categorical term will be defined.
2. Pupils will brainstorm or suggest possible synonyms.
3. Pupils will review what thinking skill was used to describe the above activity.

Structured Activity:

1. Material managers will pick up a Create a Creature Classification Lab chart.

2. Each group will fill in and complete their chart.
3. Recorders will complete the classification chart according to group's consensus.
4. After 15 minutes, an open discussion of groups' findings will follow.
5. The teacher will draw numbers from a box.
6. Recorders will circle the correspondent number on the chart under the proper lettered category.
7. Material managers will collect paper and markers for their group.
8. The recorder or group designated person will draw the creature as dictated by the group's circled items on the classification chart.
9. The creature is drawn on butcher paper.
10. Group members will decorate and will name their creature.
11. Reporters from each group will show and tell to the class their creative creature.

Closure:

1. Students will be given a PMI to reflect on their thoughts about the activity.
2. Time will be allowed to share and discuss the PMIs.

CREATE A CREATURE CLASSIFICATION LAB

	A	B	C	D	E	F
	BODY SYMMETRY	SEGMENTATION	FORM OF LOCOMOTION	SENSORY ORGANS	SUPPORT STRUCTURES	BODY COVERING
1						
2						
3						
4						
5						
6						

SKYLIGHT PUBLISHING

Appendix H

Lesson Plan: Math

Cooperative Learning

Multiple Intelligences-logical/mathematical, visual/spatial, bodily kinesthetic, intrapersonal, and interpersonal

Higher Order Thinking Skill-predicting

Grade Level: Kindergarten

Focus Activity:

1. Using half the class as the audience, the other half will be the participants.
2. Have some of the participants get chairs.
3. Without talking to the class, the teacher will place participants in a give pattern- sit, stand, sit, stand, etc.
4. Tell students to think about what they see and be able to tell what the last four students should do.

Lesson Objective:

To make a good guess on what will come next (predicting) in a given pattern.

Input:

1. Using the dot chart, the teacher will begin a pattern.
2. The students will take turns adding to the pattern until the dot chart is filled.
3. Ask the students how did they know what came next.
4. Have the students verbalize what they see in the pattern to the end of the dot chart.
5. Explain to the students that to make a good guess of what will come next is called- predicting-synonym.
6. Explain to the students that in order to predict what will come next in a pattern. The students need to begin at the left and read each picture.
7. Provide an example of when you use predicting.
8. Ask students to think of other examples of when they would use predicting.

Structured Activity:

1. Using the think-pair-share strategy of cooperative learning, each person of the group will take a handful of the same manipulatives to their place. Examples of manipulatives to use are: links, bear counters, unifix cubes, and pattern blocks.

2. In the think-pair group, one person will create a pattern. The other person will read and predict what will come next. Extend the pattern to five more manipulatives following the given pattern.
3. Exchange roles within the think-pair group so the other person can read and predict a different, given pattern.
4. After a given amount of time, the groups will come back to the rug to share their patterns and predicting.

Metacognitive Discussion:

1. What were you and your partner suppose to do with your manipulatives?
2. What was hard or easy for you when you guessed or predicted what will come next in the given pattern?
3. How did you know what would come next in your pattern?
4. Do you think predicting or guessing what will come next can be helpful or useful to us?
5. When do you think we use guessing or predicting?

Closure:

1. What is predicting?
2. What activities can you think of where you can predict or guess what will happen next?
3. Using the pattern calendar on the bulletin board, ask students what seasonal picture will come next.
4. Have students predict what activity comes next during the scheduled day in the classroom.
5. Each student will take a handful of manipulatives back to his/her table place. He/She will create a pattern using the attribute of color. The student will record the color pattern that was created on a strip of graph paper. The student will predict the continued pattern to the end of the strip of graph paper.

Anticipate Transfer:

Students will use the skill of predicting in the areas of:

1. reading
2. science experiments
3. weather
4. skip counting of numbers

Appendix I

Clues

Chapter
19

BACKGROUND	Drawing inferences is much like filling in a missing clue. Students must discover the hidden, or at least less obvious, connections between words, phrases, and sentences and draw conclusions that are valid. Readers become detectives as they search for the missing clues.
THINKING SKILL	Classifying
FOCUS ACTIVITY	Ask students to identify the names of several detectives they know from reading, TV, or movies. Ask what a detective might conclude from these words: knife, blood, corpse. Indicate that the detective fills in the blanks by clustering words and drawing inferences.
OBJECTIVE	To cluster or classify common words in order to draw inferences from limited data
INPUT	On the overhead or in a handout introduce the acronym CLUES and explain what each letter represents. Cluster similar words Label clusters Untangle subclusters Examine clusters and subclusters Set patterns

Taken from Catch Them Thinking Bellanca & Fogarty,1993

Appendix I

Explain how they can use the CLUES to remind them how to group or classify words or concepts in order to identify the inferences suggested. Highlight the importance of inferential reading and show how it is much like the clue finding that detectives do.

Use the following collection of words to demonstrate how to use each letter in the acronym CLUES: radar, jet, flames, base, news, cost, and fog. Go letter by letter and check for understanding.

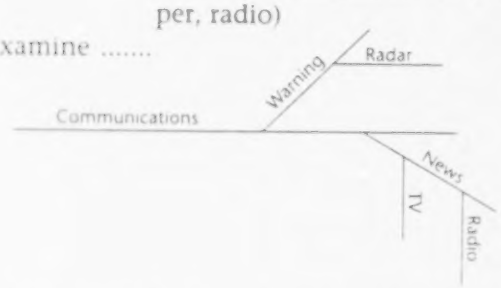
Example:

C ⊃ Cluster ..... 1. radar, radio, TV, news
2. cloud, fog
3. airport, base, jet
4. flames, cost

L ⊃ Label ..... **communications** (radio, radar, TV, news)
weather (cloud, fog)
planes (airport, jet, base)
accident (flames, cost)

U ⊃ Untangle ..... **warning device** (radar)
news announcement (TV, newspaper, radio)

E ⊃ Examine .....



S ⊃ Set pattern .... bad weather ⊃ jet plane crash ⊃ news ⊃ cost

ACTIVITY

Instructions:

1. Ask students to explain CLUES in their own words.

2. Use the overhead or worksheets with the words listed on p. 111 in the attribute web below.

Appendix I

Students may work alone or in threes or twos. Provide paper or blank overheads for each group to work a web. They may add as many branches or subbranches as they desire. The core concept will go in the middle. There is no one right answer, but groups will have to explain how and why they formed their clusters.

The words are astronaut, star seeker, laser beam, shuttle, booster rocket, gravity, lead boots, light years, solid fuel, capsule, heat shield, moon walker, and launch pad.

You may substitute any group of twenty to forty words. Take an article from a newspaper or magazine or a chapter from the textbook. In your list include the title, subtopic, nouns, and a random selection of words from each subtopic; mix the list.

3. Allow five to ten minutes for the completion of the webs.

4. Select one or more groups to explain their clusters. Encourage questions about how and why from the class about the sample webs. Be sure that the sample webs are visible (overhead or display sheet) to the class. Encourage acceptance of different classifications as long as the author group can explain its clusters.

METACOGNITIVE DISCUSSION

1. Review CLUES.

2. Ask another sample group or two to trace the clustering they did with the webs in relation to the CLUES guidelines.

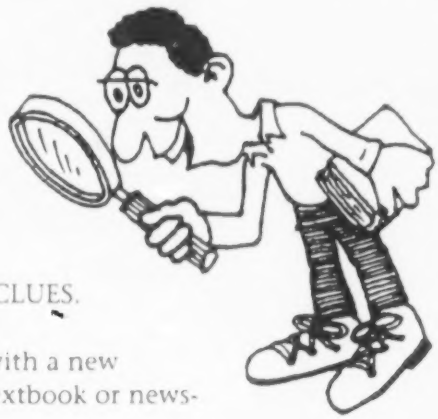
3. Identify which items students had difficulty in clustering. What did they do to solve the problem(s)?

4. What general rules can one make about classifying when clustering problems occur?

5. When might students use CLUES in their studies? When else might CLUES help student thinking?

CLOSURE

In their thinking LOGs, have students complete the following exercises.



1. Summarize CLUES in their own words.
2. Record what-to-do-if guidelines for their future use.
3. List good times to use CLUES.
4. Practice using CLUES with a new webbing from a class textbook or newspaper.